

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s) : Cohava GELBER  
Serial No. : Divisional application of U.S. Serial No. 09/374,367  
Filed : Herewith (November 28, 2001)  
For : ***Myeloma Surface Glycoprotein, Antibodies Thereto and Uses Thereof***  
Group Art Unit : To Be Assigned  
Examiner : To Be Assigned

Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

**PRELIMINARY AMENDMENT**

Dear Sir:

Preliminary to the examination of the above-identified patent application, entry and consideration of this Preliminary Amendment are respectfully requested.

**IN THE TITLE:**

At page 1, please delete the title "Myeloma Surface Glycoprotein, Antibodies Thereto, and Uses Thereof" and replace it with the following:

-- Myeloma Cell and Ovarian Cancer Cell Surface Glycoproteins, Antibodies Thereto, and Uses Thereof --.

**IN THE CLAIMS:**

**Amended claims:**

Please amend claim 33 as follows:

33. (Amended) A method for detecting the presence and extent of ovarian cancer in a patient comprising:

(a) determining in a body fluid sample of said patient the level of antibody-detectable antigen present on the surface of ovarian cancer cells, and shed from the ovarian cancer cells, said ovarian cancer cell surface antigen being:

(i) a single polypeptide having a molecular weight of about 76 kDa to about 213 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions;

(ii) absent from the group consisting of human peripheral blood mononuclear cells, human B cells, human B cell myelogenic leukemia cells, breast cancer cells, prostate cancer cells and cervical cancer cells; and

(iii) glycosylated; and

(b) correlating the quantity of said antigen with the presence and extent of said ovarian cancer cells in said patient.

**New claims:**

Please add the following new claims 40-64:

40. (New) The method according to claim 33, wherein the ovarian cancer cell surface antigen binds to a monoclonal antibody produced by the hybridoma cell line

having ATCC Accession No. PTA-450, or binding fragment thereof.

41. (New) The method according to claim 33, wherein the body fluid sample is a blood sample.

42. (New) The method according to claim 40, wherein the antibody binding fragment is selected from the group consisting of F(ab')<sub>2</sub>, Fab', Fv, Fd' and Fd antibody fragments.

43. (New) A method of diagnosing ovarian cancer in a patient, comprising:

(a) measuring in cells, tissues, or body fluids of the patient levels of antigen associated with ovarian cancer cells, the ovarian cancer cell-associated antigen having the following characteristics:

(i) it is a single polypeptide having a molecular weight of about 76 kDa to about 213 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions;

(ii) it is absent from the group consisting of human peripheral blood mononuclear cells, human B cells, human B cell myelogenic leukemia cells, breast cancer cells, prostate cancer cells and cervical cancer cells; and

(iii) it is glycosylated; and

(b) comparing the measured levels of the antigen of (a) with levels of the antigen in cells, tissues, or body fluids from a normal human control, wherein an

increase in the measured levels of the antigen in the patient versus the normal control is associated with the presence of ovarian cancer.

44. (New) The method according to claim 43, wherein the ovarian cancer cell surface antigen binds to a monoclonal antibody produced by the hybridoma cell line having ATCC Accession No. PTA-450, or binding fragment thereof.

45. (New) The method according to claim 44, wherein the antibody binding fragment is selected from the group consisting of  $F(ab')_2$ ,  $Fab'$ ,  $Fv$ ,  $Fd'$  and  $Fd$  antibody fragments.

46. (New) The method according to claim 43, wherein the body fluid is a blood sample.

47. (New) A method of diagnosing or detecting ovarian cancer cells in a patient, comprising:

(a) incubating detectably labeled monoclonal antibody having ATCC Accession No. PTA-450, or binding fragment thereof, with (i) ovarian cells from the patient or (ii) a body fluid sample from the patient; and

(b) detecting the binding of the monoclonal antibody to (i) the ovarian cells or (ii) shed antigen from ovarian cancer cells in the body fluid sample, thereby diagnosing or detecting ovarian cancer cells in the patient.

48. (New) The method according to claim 47, wherein the monoclonal antibody is labeled with a detectable label selected from the group consisting of a

fluorophore, a chromophore, a radionuclide, a chemiluminescent agent, a bioluminescent agent and an enzyme.

49. (New) The method according to claim 47, wherein the body fluid sample is a blood sample.

50. (New) The method according to claim 47, wherein the antibody binding fragment is selected from the group consisting of  $F(ab')_2$ ,  $Fab'$ ,  $Fv$ ,  $Fd'$  and  $Fd$  antibody fragments.

51. (New) A method of monitoring the effectiveness of therapy for ovarian cancer, comprising:

(a) periodically measuring in a body fluid sample taken from a patient undergoing the therapy changes in the level of antigen associated with ovarian cancer, said antigen having the following characteristics:

(i) it is a single polypeptide having a molecular weight of about 76 kDa to about 213 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions;

(ii) it is absent from the group consisting of human peripheral blood mononuclear cells, human B cells, human B cell myelogenic leukemia cells, breast cancer cells, prostate cancer cells and cervical cancer cells; and

(iii) it is glycosylated; and

(b) correlating a change in level of the antigen with the effectiveness of

the therapy, wherein a lower level of antigen determined at a later time point relative to the level of antigen determined at an earlier time point during the course of therapy indicates effectiveness of the therapy for ovarian cancer.

52. (New) The method according to claim 51, wherein the levels of antigen of step (a) are measured with a detectably labeled monoclonal antibody having ATCC Accession No. PTA-450, or binding fragment thereof.

53. (New) The method according to claim 52, wherein the antibody binding fragment is selected from the group consisting of F(ab')<sub>2</sub>, Fab', Fv, Fd' and Fd antibody fragments.

54. (New) The method according to claim 51, further wherein no change in the level of antigen, or an increase in the level of antigen, indicates ineffectiveness of therapy or continued tumor growth.

55. (New) The method according to claim 51, wherein ovarian cancer therapy is selected from surgery, chemotherapy, and radiation therapy.

56. (New) The method according to claim 51, wherein the body fluid sample is a blood sample.

57. (New) A method of detecting multiple myeloma or ovarian cancer cells in a patient sample, comprising:

(a) incubating detectably labeled monoclonal antibody deposited under

ATCC Accession No. PTA-450, or binding fragment thereof, with cells from a patient undergoing testing for multiple myeloma or ovarian cancer, wherein said monoclonal antibody recognizes an epitope shared by myeloma cell surface antigen expressed on myeloma cells and ovarian cancer cell surface antigen expressed on ovarian cancer cells; and

(b) detecting the binding of the monoclonal antibody to the myeloma cell or ovarian cancer cells, thereby detecting multiple myeloma or ovarian cancer cells in the patient.

58. (New) The method according to claim 57, wherein the monoclonal antibody is labeled with a detectable label selected from the group consisting of a fluorophore, a chromophore, a radionuclide, a chemiluminescent agent, a bioluminescent agent and an enzyme.

59. (New) The method according to claim 57, wherein the antibody binding fragment is selected from the group consisting of F(ab')<sub>2</sub>, Fab', Fv, Fd' and Fd antibody fragments.

60. (New) A method of detecting multiple myeloma or ovarian cancer in a patient sample, comprising:

(a) incubating detectably labeled monoclonal antibody deposited under ATCC Accession No. PTA-450, or binding fragment thereof, with a body fluid sample from (i) a patient undergoing testing for multiple myeloma or (ii) a patient undergoing testing for

ovarian cancer, wherein myeloma cell surface antigen shed from the myeloma cells and ovarian cancer cell surface antigen shed from the ovarian cancer cells is recognized via a shared epitope by the monoclonal antibody deposited under ATCC Accession No. PTA-450; and

(b) detecting the binding of the monoclonal antibody to the shed myeloma cell antigen or ovarian cancer cell antigen in the body fluid sample, thereby detecting multiple myeloma or ovarian cancer in the patient.

61. (New) The method according to claim 60, further wherein the monoclonal antibody is labeled with a detectable label selected from the group consisting of a fluorophore, a chromophore, a radionuclide, a chemiluminescent agent, a bioluminescent agent and an enzyme.

62. (New) The method according to claim 60, further wherein the antibody binding fragment is selected from the group consisting of  $F(ab')_2$ ,  $Fab'$ ,  $Fv$ ,  $Fd'$  and  $Fd$  antibody fragments.

63. (New) The method according to claim 60, further wherein the body fluid sample is a blood sample.

64. (New) The method according to claim 60, further wherein the shed myeloma cell antigen (i) is a single glycosylated polypeptide having a molecular weight of about 78 kDa to about 120 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions, and (ii) is absent from human peripheral blood



mononuclear cells, absent from human B cells, absent from human B cell myelogenic leukemia cells, absent from breast cancer cells, prostate cancer cells and cervical cancer cells; and the shed ovarian cancer cell antigen (i) is a single glycosylated polypeptide having a molecular weight of about 76 kDa to about 213 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions, and (ii) is absent from human peripheral blood mononuclear cells, absent from human B cells, absent from human B cell myelogenic leukemia cells, absent from breast cancer cells, prostate cancer cells and cervical cancer cells.

#### **REMARKS**

In this Preliminary Amendment, claim 33 has been amended and new claims 40-64 have been added to more fully describe the invention. The claims as presented herein are fully supported by the instant specification, including the claims as originally filed. Consequently, no new matter has been introduced by the amended and new claims. The currently pending claims are 33 and 40-64. Amended claim 33 is presented separately on page 10, which is entitled "Version with markings to show changes made".

#### **AUTHORIZATION**

Should fee(s) additional to those paid herein be deemed necessary for the filing of this responsive amendment, the Commissioner is hereby authorized to charge any fee(s) which may be required to Deposit Account No. 13-4500, Order No. 3828-

4000US1.

Respectfully submitted,

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Version with markings to show changes made

33. (Amended) A method for detecting the presence and extent of ovarian cancer in a patient comprising:

(a) determining in a body fluid sample of said patient the level of [the antigen of claim 16] antibody-detectable antigen present on the surface of ovarian cancer cells, and shed from the ovarian cancer cells, said ovarian cancer cell surface antigen being:

(i) a single polypeptide having a molecular weight of about 76 kDa to about 213 kDa as determined by SDS polyacrylamide gel electrophoresis (SDS-PAGE) under reducing conditions;

(ii) absent from the group consisting of human peripheral blood mononuclear cells, human B cells, human B cell myelogenic leukemia cells, breast cancer cells, prostate cancer cells and cervical cancer cells; and

(iii) glycosylated; [in a sample of bodily fluid of said patient,] and

(b) correlating the quantity of said antigen with the [present] presence and extent of said ovarian cancer cells in said patient.